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COMPARATIVE STUDY OF ANTIBODY LEVELS DEVELOPED BY VACCINATION AGAINST POLIO VIRUS IN POPULATION AFTER VACCINE TYPE ALTERATION

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During clinical trials performed in 2014, samples from Hungarian patients of different age groups were tested for antibodies against all 3 serotypes of poliovirus, a member of Picornaviridae family. During the virus neutralization serological test, blood samples were titrated using permanent virus concentration. Based on the cythopathic effect observed under a light microscope, the antibody level of the patient was assessed. The 100 people examined were classified into 5 groups based on age and type of original vaccine: I. Newborns, no vaccination given; II. Immunosuppressed patients; III. Born before 1986, received only OPV vaccine; IV. Born between 1992– 2005, received a combination of OPV and IPV vaccines; V. Born after 2006, received only IPV vaccine. Results show that vaccination coverage meets all the criteria. None of the immunized persons was seronegative to all three polioviruses. Both IPV and OPV vaccines are effective against poliovirus. Blood samples from newborn babies with no immunization were also examined.

Results show that most newborns have maternal antibodies in their blood. Results of group II show that immunosuppression does not have a negative influence on blood antibody levels against polioviruses. In spite of the low number of samples, our results show that seroconversion after immunization in the Hungarian population is adequate. For more accurate results about vaccineation coverage in the population, further trials would be necessary.

SEQUENTIAL DIVERSITY OF PEPTAIBOL PROFILES OF *TRICHODERMA* SPECIES CAUSING GREEN MOULD DISEASE OF CULTIVATED MUSHROOMS

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The green mould disease of cultivated mushrooms firstly emerged at an epidemic level in champignon (*Agaricus bisporus*) production during the 1980's in Northern Ireland. Later, the disease caused large yield losses in several other countries including Hungary. Initially the species *Trichoderma harzianum* was suspected as the causal agent of this epidemic disease, but later the morphological and DNA sequence differences resulted in the description of the virulent species as *T. aggressivum*. The infections were also observed in North-America, where it turned out that the infectious agent is another biotype of the same species *T. aggressivum*. The European biotype was named as *T. aggressivum* f. *europaeum* while the American one as *T. aggressivum* f. *aggressivum*. Later, green mould diseases were also observed in oyster mushroom (*Pleurotus ostreatus*) production. Morphological, physiological and molecular analyses revealed that the causal agents of *Pleurotus* green mould disease are different from *T. aggressivum*, they were described as the new species *T. pleurotum* and *T. pleuroticola*. In our present work, four strains of the genus *Trichoderma, T. aggressivum* f. *europaeum* SZMC 1811, *T. aggressivum* f. *aggressivum* SZMC 1813, *T. pleurotum* SZMC 12454 and *T. pleuroticola* SZMC 12727 were investigated for peptaibol

production on malt extract-, champignon powder- and oyster mushroom powder-containing media. For analysis, on-line reversed-phase high performance liquid chromatography (HPLC) coupled to electrospray ionization ion trap mass spectrometry (ESI-IT-MS) was used after the solid phase clean-up of the culture extracts. Differences were detected in the produced groups of peptaibols on various media and new peptaibol compounds could also be identified in the groups. Several known peptides belonging to the group of trichorzianins were detected, e.g. trichorzianin TA IIIb/IIIc, TA/TB IIa, TB IVb, TA II a, TA/TB Vb, TAP-14a, TA VII and TA/TB VI. Some new, previously unknown members of the trichorzianins and trichorzins were also detected. Furthermore, a completely new group was also observed and described.

The highest amounts of the total produced peptaibols were observed in the extracts of strains cultivated on malt extract medium. In conclusion, the diversity of the peptaibols proved to be different in the extracts and showed dependence from the media.

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TAXONOMIC COMPOSITION OF PICOCYANOBACTERIAL COMMUNITIES IN CENTRAL EUROPEAN LAKES

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Members of the picocyanobacterial genus *Synechococcus* are important planktonic components in open ocean ecosystems, in continental freshwaters and also in saline aquatic habitats. Freshwater phylotypes form phylogenetically completely distinct clades apart from those typically occur in the open ocean. Taxonomic identification of these small cyanobacteria is based on molecular biological techniques, because their distinctive morphological features are limited. Based on microscopic enumeration, picocyanobacteria are predominant members of the plankton in various aquatic habitats of Central Europe. Our aim was to determine the taxonomic composition of picocyanobacterial communities in freshwater (Lake Balaton, Hungary), soda (Zab-szék, Hungary) and saline lakes (Lake Tarzan, Lake Cabdic and Lake Ursu, Romania) on the basis of the comparative sequence analysis of the ribosomal ITS region and the 16S rRNA gene.

It seems that salinity defines the ratio of marine to non-marine picocyanobacterial clades in these aquatic environments, since non-marine clades of the genus *Synechococcus* appeared in freshwater, soda lakes and in salt lakes having lower salt concentrations, but these taxa were absent in saline lakes having higher salt concentration. Interestingly, the *Synechococcus* community of all studied salt lakes was dominated by phylotypes characteristic to oceans and seas. The dominance of marine picocyanobacteria in continental waters was not reported previously.

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